



**PRS: Physics Reconstruction and Selection
HCAL/JetsMET group**

OSCAR Validation for JetMET

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<http://computing.fnal.gov/cms/jpg/Default.htm>



Road to JetMET simulation with OSCAR

To switch from CMSIM to OSCAR “today”

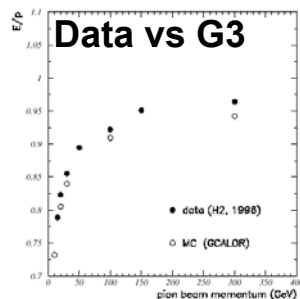
- No good test beam data with CMS calorimeter (yet).
- Bottom Line – Same performance as current G3/CMSIM.
- **Requirements**
 - CMS geometry
 - Hits to ORCA
 - EM/HAD shower similar to GHEISHA/GCALOR in G3
 - HF shower library
- **Verification Procedure**
 - CMSIM vs OSCAR comparison (hit level) for single particle response in “E-eta-phi-particles(jets)” space
 - Resolution, linearity, shower shape
 - If we find problem, report it to the G4 team.

To use OSCAR for physics analysis in 2007.

- **Need better validation of hadron physics**
 - In general, it requires extensive collection of data on hadron-nuclei interactions...
 - Test beam on CMS calorimeter or in-situ...



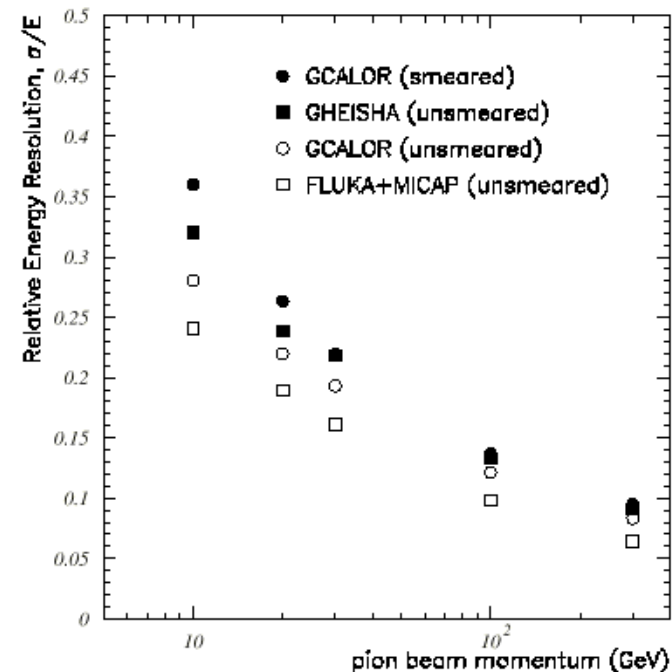
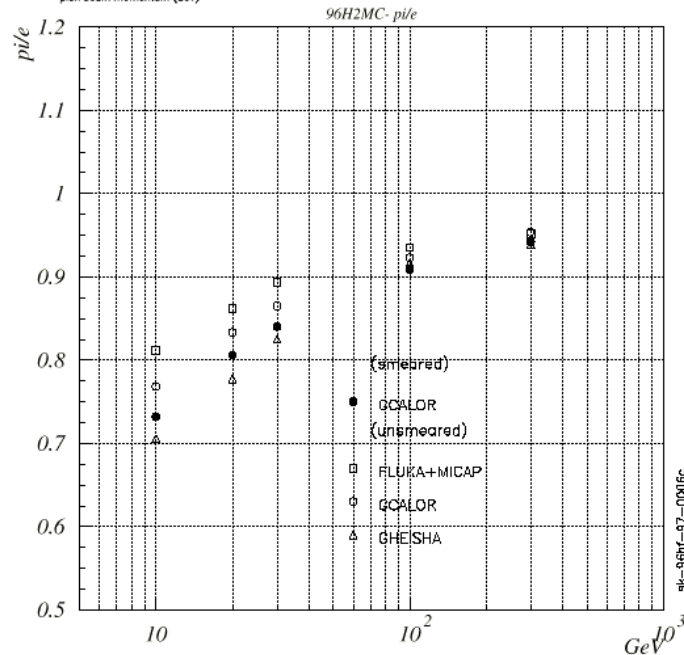
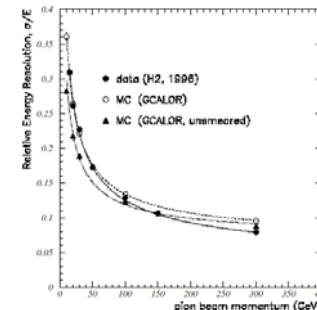
Hadron Shower Simulation



G3- 1996 test beam simulation
E(beam)=20 - 300GeV

pi/e

resolution



Needs: clean data below 20GeV
verify/tune G4